

IN THE CLAIMS:

✓
Please cancel claims 1-9, without prejudice.

✓
Please add the new set of claims 10-18 set forth on the enclosed pages.

IN THE ABSTRACT:

✓
Delete the "Abstract" on the PCT cover sheet and replace it with the "Abstract
of the Disclosure" set forth on a separate sheet attached hereto.

REMARKS

An abstract has been provided on a separate sheet; and the claims have been amended to conform to U.S. practice.

Wherefore, an early action on the merits is earnestly solicited.

Respectfully submitted,

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PROPOSED NEW CLAIMS

10. A droplet generator for a continuous stream ink jet print head, comprising:

- a) an elongate cavity for containing ink;
- b) nozzle orifices in a wall of the cavity for passing the ink from the cavity to form jets, said nozzle orifices extending along a length of the cavity;
- c) actuator means disposed on an opposite side of the cavity to said wall for vibrating the ink in the cavity such that each said jet breaks up into ink droplets, a standing wave being present in the ink in the cavity during operation of the generator; and
- d) said cavity having a cross-sectional area which varies along said length in a manner so as to tailor a form of said standing wave in the cavity such that each said jet breaks up into the ink droplets at a respective predetermined distance from said wall of the cavity.

11. The generator according to claim 10, wherein the form of said standing wave is tailored such that each said jet breaks up into the ink droplets at substantially the same predetermined distance from said wall of the cavity.

12. The generator according to claim 11, wherein the cross-sectional area of the cavity varies cyclically along said length between minimum and maximum values, said cross-sectional area having the minimum value whereat said standing wave has a region of low acoustic pressure at the nozzle orifices, said cross-sectional area having the maximum

value whereat said standing wave has a region of high acoustic pressure at the nozzle orifices.

13. The generator according to claim 12, wherein said cross-sectional area varies sinusoidally along said length.

14. The generator according to claim 11, wherein said cavity has a generally triangular cross-section.

15. The generator according to claim 11, wherein said cavity has a generally rectangular cross-section.

16. A method of operating a droplet generator for a continuous stream ink jet print head, comprising the steps of:

a) containing ink in an elongate cavity having a length and a cross-sectional area;

b) passing the ink from the cavity through nozzle orifices in a wall of the cavity to form jets, the orifices extending along the length of the cavity;

c) vibrating the ink in the cavity such that each said jet breaks up into ink droplets, a standing wave being present in the ink in the cavity during operation of the generator;

d) varying the cross-sectional area of the cavity along said length to tailor a form of the standing wave in the cavity such that each said jet breaks up into the ink droplets at a respective predetermined distance from said wall of the cavity; and

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e) permitting parameters of the operation of the generator to stray such that the cavity operates over a range extending substantially all the way between two successive resonances along the length of the cavity.

17. The method according to claim 16, wherein said parameters of the operation permitted to stray are ink composition and temperature.

18. The method according to claim 16, wherein said cavity operates at substantially midway between the two successive resonances along the length of the cavity.